DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 5-11, 14, 15, 17-21, 23-50 and 54-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,707,821 to Shaffer et al in view of U.S. Patent No. 6,741,586 to Schuster et al, and in further view of U.S. Patent No. 6,757,239 to Kejriwal et al.

Referring to claims 1, 31, 44-47 and 57, Shaffer teaches in Figure 13 a portion of a device, e.g., implemented on an IP phone, that multiplexes VoIP packets and other data packets onto a common data link using a priority queuing mechanism. The VoIP packets are created by digitally encoding a voice capture channel using an analog to digital converter (22) and a voice encoder (122). Data packets are received from other applications running on the computer, e.g., a web-browser, e-mail application, or networked file system application (receiving data packets from data processing device) (Column 1, lines 50-59). Data packets pass through an optional data packet fragmenter (146), which segments large data packets into sequences of smaller data packets before submission to the queue (dividing the data packets into divided data packets) (Column 9, lines 9-14). The packet scheduler (144) multiplexes packets from the queues (106,108) to the data link interface (interspersing the divided packets among the

voice packets and sending the data packets and the voice packets to a communication network) (Figure 6). Shaffer et al also disclose assigning a first predetermined priority level (highest priority) to the voice packets. The voice packets from time-critical packet queue 106 are given a higher priority than the data packets from data packet queue 108. Refer to Column 5, lines 16-37 and Column 9, lines 1-14.

Shaffer does not specifically disclose receiving data packets from a *plurality* of data processing devices.

Schuster et al disclose in Figure 1 a VOIP phone 108a that receives data packet from a plurality of data processing devices (user computer 50 and PDA 110a). Refer to Column 6, line 40 to Column 7, line 7 and Column 7, lines 57-67. Furthermore, as shown in Figure 3, a VOIP phone 108a includes interfaces (248, 254, 256, 267, 265, 262, 264, 96) to several different devices. Refer to Column 11, line 49 to Column 12, line 63. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include receiving data packets from a *plurality* of data processing devices; the motivation being so that a system can support several different types of devices, thereby diversifying the system.

Shaffer also does not disclose: assigning a second user selected predetermined priority level to data packets from a first data processing device of the plurality of data processing devices and a third user selected predetermined priority level to data packets from a second data processing device of the plurality of data processing devices where the first, second and third priority levels are all different; and sending the

data packets based upon respective priorities of each voice packet and each data packet on a packet by packet basis.

Kejriwal et al disclose that in a network, the user and service provider decide on a Service Level Agreement, in which the user determines the priority of different traffic types. As agreed upon by the user, voice packets can be assigned a higher priority than data packets so that voice packets will be transmitted before data packets to reduce voice latency. For example (Column 28, line 66 to Column 29, line 59), voice/video packets can be assigned a 2nd highest priority and data packets can be assigned the 3rd highest priority. The user may however choose to have the voice/video packets processed according to the 3rd rather than the 2nd highest priority level. Refer also to Column 2, line 12 to Column 3, line 31; Column 4, lines 31-47; Column 8, lines 6-16; Column 12, line 52 to Column 14, line 5; and Column 19, lines 34-65. Although not specifically stated, different types of packets each with a different priority level can be each from a different device. For example, in U.S. Patent No. 6,504,913 to Patterson et al, in Figure 3, voice data from telephone 102 is given a higher priority than fax data from fax machine 104, which is given a higher priority than data from workstation 100. Refer to Column 5, lines 23-37; and Column 5, line 52 to Column 7, line 14. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include assigning a second user selected predetermined priority level to data packets from a first data processing device of the plurality of data processing devices and a third user selected predetermined priority level to data packets from a second data processing device of the plurality of data

processing devices where the first, second and third priority levels are all different; and sending the data packets based upon respective priorities of each voice packet and each data packet on a packet by packet basis. One would be motivated to do so in order to prioritize packets so that time critical data such as voice is sent out first, followed by successively lower priority packets, thereby ensuring that real time data is sent with the highest quality of service and non-real time data is sent last, since it is not time sensitive.

Referring to claim 5 and 48, Shaffer teaches in Figure 10 the method described in reference to claims 1 and 44 that the first and second data processing device may be selected from a group consisting of a computer (78), a laptop computer (none), a personal digital assistant (none), or a cellular telephone (none). Refer to Column 7, lines 57-64.

Referring to claims 6-8, 20, 21, 25-27, 32, 49, 50, 55 and 58, Shaffer teaches in Figure 6 the method described in reference to claims 1, 31 and 44 above and also teaches that the scheduler selects time-critical packets from queue 106 (the Voice Packet queue) until queue 106 is emptied (voice packets have a higher priority than data packets and are processed before the data packets, the priority is assigned based upon how the packets are processed and preference is given to voice packets). Refer to Column 5, lines 16-37.

Referring to claim 9, Shaffer does not disclose wherein at least one of the data packet priorities is a higher priority than the voice packet priority and higher priority data packets are processed before the voice packets.

Kejriwal et al disclose that in a network, the user and service provider decide on a Service Level Agreement, in which the user determines the priority of different traffic types. For example (Column 28, line 66 to Column 29, line 59), voice/video packets can be assigned a 2nd highest priority and data packets can be assigned the 3rd highest priority. The user may however choose to have the voice/video packets processed according to the 3rd rather than the 2nd highest priority level. The user can thus change the data packets to be of a higher priority than the voice packets. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein at least one of the data packet priorities is a higher priority than the voice packet priority and higher priority data packets are processed before the voice packets. One would have been motivated to do so in case the user selected a data packet application to be of higher priority than a voice packet application, thereby allowing flexibility in transmission order preference.

Referring to claims 10, 18, 28, 33 and 54, Shaffer teaches in Figure 10 the method described in reference to claims 1, 15, 20, 31 and 44 above and also teaches that the network is an Internet Protocol network (100). Refer to Column 7, lines 31-34.

Referring to claim 15, Shaffer teaches in Figure 6 the method described in reference to claims 1, 31 and 44 and claims 6-8, 20, 21, 25-27, 32, 49, 50, 55 and 58 above. Shaffer does not disclose that the voice over packet network telephone determines whether the data packets are destined for any data processing device coupled directly to the voice over packet network telephone and not otherwise

connected to the communication network and if destined for the data processing device, sending the data packet directly to the data processing device.

Schuster et al disclose in Figure 1 that the voice communication device 108a can send packets to data processing devices (user computer 50 and PID 110a) which are connected to voice communication device 108a and not to the communication network (data network 106). Refer to Column 5, line 53 to Column 7, line 7. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the voice over packet network telephone determines whether the data packets are destined for any data processing device coupled directly to the voice over packet network telephone and not otherwise connected to the communication network and if destined for the data processing device, sending the data packet directly to the data processing device. One would have been motivated to do so in order to allow the voice over packet network telephone to send data to devices not connected to the network, thereby increasing system flexibility.

Referring to claim 17, Shaffer teaches in Figure 10 the method described in reference to claim 15 above that the first and second data processing device may be selected from a group consisting of a computer (78), a laptop computer (none), a personal digital assistant (none), or a cellular telephone (none). Refer to Column 7, lines 57-64.

Referring to claims 36 and 59, Shaffer teaches in Figure 13 the method described in reference to claim 1 above that data link 74 is clearly a two-way path. The

network described is clearly a two-way network that can both transmit data or receive data from another source.

Referring to claim 38, Shaffer teaches in Figure 10 the method described in reference to claim 36 above that the first and second data processing device may be selected from a group consisting of a computer (78), a laptop computer (none), a personal digital assistant (none), or a cellular telephone (none). Refer to Column 7, lines 57-64.

Referring to claim 39, Shaffer teaches in Figure 6 the method described in reference to claim 36 above and also teaches that the scheduler selects time-critical packets from queue 106 (the Voice Packet queue) until queue 106 is emptied. Refer to Column 5, lines 16-37.

Referring to claim 40, Shaffer teaches in Figure 10 the method described in reference to claim 36 above and also teaches that the network is an Internet Protocol network (100). Refer to Column 7, lines 31-34.

Referring to claim 56, Shaffer teaches in Figure 13 the method described in reference to claim 1 above and also teaches that the VoIP packets are created by digitally encoding a voice capture channel, e.g., from a microphone or headset, (user interface) using an analog-to-digital converter (22) and a voice encoder (122). Refer to Column 1, lines 53-56.

Referring to claims 3, 23, 24 and 37, Shaffer teaches the method described in reference to claims 1, 20, 36 and 44 above and also teaches in Figure 4 that the two data packets have been divided into 3 equal parts and 1 unequal part.

Referring to claims 11, 14, 19, 29, 30, 34, 35, and 41-43, Shaffer teaches in Figure 10 the method described in reference to claims 1, 15, 20, 31, 36 and 44 above and also has clearly taught that the network is an Internet Protocol network (100). Refer to Column 7, lines 31-34. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art that the Ethernet protocol is used in networks using the Internet Protocol. One of ordinary skill in the art would have been motivated to use the Ethernet Protocol on an Internet Protocol network is a well-known industry practice.

3. Claims 2, 16, 22 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,707,821 to Shaffer et al in view of U.S. Patent No. 6,741,586 to Schuster et al in view of U.S. Patent No. 6,757,239 to Kejriwal et al, and in further view of U.S. Patent No. 6,904,037 to Oran et al.

Shaffer does not disclose wherein the step of determining further comprises comparing the data packets to a size threshold and determining that the data packets are to be divided if the data packets are larger than the size threshold.

Oran et al disclose in Figure 5 a segmenting block 68 that fragments each received data packet if it is longer than a given threshold size. Segments are stored in a segment data packet buffer 72. Refer to Column 4, line 64 to Column 5, line 31. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the step of determining further comprises comparing the data packets to a size threshold and determining that the data packets are to be divided if the data packets are larger than the size threshold. One would be motivated

to do so in order to segment large data packets to in order to avoid network congestion and facilitate scheduling since smaller data packets are easier to schedule. Shaffer et al also disclose that when the scheduler has difficulty scheduling large data packets for transmission, it sends the data to a fragmenter to fragment the large packets (Column 9, lines 9-14).

4. Claims 4 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,707,821 to Shaffer et al in view of U.S. Patent No. 6,741,586 to Schuster et al in view of U.S. Patent No. 6,757,239 to Kejriwal et al, and in further view of U.S. Patent No. 6,894,976 to Banga et al.

Shaffer et al do not disclose wherein the data packets determined to need dividing are randomly divided into random, no-uniform size smaller packets.

Banga et al disclose that if a packet is larger than the maximum transfer unit MTU, the packet is divided into data fragments. Data fragments are randomly sent on different routes of the network, and different routes have different MTU's. So, data fragments belonging to the same packet can be of different sizes fragments depending on which route they took though the network. This is indicated by a header in each data fragment which includes the length of the data fragment. In Figure 4, fragment B2 is 750 bytes since it traveled on a route with a MTU of 750 bytes, and fragments A1, A3, A4 and A5 are 500 bytes since they traveled on a route with a MTU of 500 bytes. Refer to Column 6, lines 52-58; Column 7, lines 43-50; Column 10, lines 19-21; and Column 11, lines 4-15. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the data packets determined to

need dividing are randomly divided into random, no-uniform size smaller packets. One would have been motivated to do so in order to divide packets into random sizes depending on system conditions.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,707,821 to Shaffer et al in view of U.S. Patent No. 6,741,586 to Schuster et al in view of U.S. Patent No. 6,757,239 to Kejriwal et al, and in further view of U.S. Patent No. 6,081,720 to Sampson.

Shaffer et al do not disclose wherein the voice packets are exchanged over the packet network by a first Ethernet transceiver and data packets are exchanged with the first data processing device use a second transceiver.

Sampson et al disclose in Figure 2 a device with a voice transceiver segment 30 and a data transceiver segment 32 that communicate via an Ethernet LAN 34. The voice transceiver segment 30 is used to process voice signals and the data transceiver segment 32 is used to process data signals. Refer to Column 4, line 23 to Column 5, line 26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the voice packets are exchanged over the packet network by a first Ethernet transceiver and data packets are exchanged with the first data processing device use a second transceiver. One would have been motivated to do so since voice and data require different processing methods so different modules are used to handle them.

6. Claims 13 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,707,821 to Shaffer et al in view of U.S. Patent No. 6,741,586 to

Schuster et al in view of U.S. Patent No. 6,757,239 to Kejriwal et al, and in further view of U.S. Patent No, 5,453,987 to Tran.

Shaffer et al do not disclose wherein selected data packets exchanged with the first data processing device are assigned a higher priority than the voice packets, and all remaining data packets exchanged with the first data processing device are assigned a lower priority than the voice packets.

Tran discloses that in a system using a synchronous TDM protocol, voice and data terminals share the time slots. Users transmitting voice packets will be given higher priority over those users transmitting data packets. However, certain classes of data, such as data for real-time applications, may be given higher priority than voice packets. Refer to Column 4, lines 16-38. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein selected data packets exchanged with the first data processing device are assigned a higher priority than the voice packets, and all remaining data packets exchanged with the first data processing device are assigned a lower priority than the voice packets. One would have been motivated to do so in order to allow certain data packets, such as real-time data packets, to be transmitted before voice packets that are not as time-critical.

Response to Arguments

7. Applicant's arguments filed August 31, 2007 have been fully considered but they are not persuasive.

Referring to the argument of independent claims 1, 15, 20, 31, 36, 44 and 56-59 that Kejriwal et al do not disclose second and third predetermined priorities associated with a respective first and second data processing device (page 21, line 8 to page 22, line 23): Refer to the new rejection of claims 1, 31, 44-47 and 57.

Referring to the argument of claims 4 and 52 (page 22, line 24 to page 23, line 5): Refer to the new rejection of claims 4 and 52.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE NG whose telephone number is (571)272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571) 272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng
June 5, 2008

/FIRMIN BACKER/
Supervisory Patent Examiner, Art Unit 2616